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# **Armed Forces Epidemiology Board**

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***16-18 September 2003***

## **Leishmaniasis and the DoD**

**Operations ENDURING FREEDOM and IRAQI  
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# ***Background***

- ▮ **Leishmaniasis is endemic in Iraq and Afghanistan, both cutaneous and visceral types**
- ▮ **Conditions in parts of Iraq are worse than usual**
  - **Diversion/drainage of surrounding water created 50km<sup>2</sup> area of cracked earth breeding ground at Tallil**
  - **Ground heat prevent penetration by aerial spraying**
  - **Extensive local reservoirs (rats and canines)**
- ▮ **Up to 1000 sand flies in outdoor unbaited light traps, up to 10 sand flies per trap in zippered tents w/AC**
  - **PCR tests showed 2% sand flies infected with leish**
  - **Positive mosquito pools at Tallil AB and Baghdad IAP**
  - **Reports of being “eaten alive” by bugs**



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# ***In-theater Evaluation***

- ▮ **Clinical suspicion**
- ▮ **Laboratory testing by experienced infectious disease specialist with Theater Army Medical Lab**
  - **4mm punch biopsy with touch preps**
  - **PCR with validated genus specific primer/probe set, using a LightCycler® platform**
  - **Culture (up to 28 days)**
- ▮ **Air evacuation to WRAMC for treatment**
  - **“Confirmatory” testing at WRAMC/WRAIR with PCR using SmartCycler® platform and culture with speciation testing (isoenzyme electrophoresis)**



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# ***Two AF Case Studies***

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- ▮ **AF male enlisted member, stationed at Tallil AB, arrived 17 Jul, foot lesion dx as cellulitis 14 Aug, dx of cutaneous leish 16 Aug**
  - **Did not use mosquito netting, occasionally used DEET on skin, did not play outdoor sports**
- ▮ **AF male TSgt, stationed at Al Jaber AB (Kuwait), arrived in theater 14 Jul, two overnights at Tallil AB convoy rest area**
  - **Slept in sleeping bag in back of truck, took BDU top off, awoke and one arm had multiple bites**
  - **Multiple lesions reported on 20 Jul**



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# ***DoD Experience To Date***

- ▮ **2 cases from Afghanistan, Jan-May 03, (1 AF, 1 Army)**
- ▮ **15 (?) cases from Iraq/Kuwait, Jun 03 onward**
  - **2 AF, 1 Marine, 12 Army**
  - **Incubation period has been relatively short**
  - **Average number of lesions=3-4, max=9**
  - **6 cases were L. major; other results pending or inadequate culture growth to allow speciation**
- ▮ **No visceral leish cases identified—so far**
- ▮ **All cases returned to WRAMC for Rx w/Pentostam®**
- ▮ **Note: 17 cases cutaneous, 11 cases visceral reported after DESERT STORM\***



\*Ohl, et al. Mil Med. 1993  
Nov;158(11):726-9

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# ***Worries***

- ▮ **Some troops arriving unprepared**
  - **Awareness, PPE supplies & training in their use**
- ▮ **Variable compliance with PPE use in the field**
  - **Lack of command emphasis at some sites**
- ▮ **Variable availability of PPE in the field (AC tents, DEET, area insecticides, etc.)**
- ▮ **Limited ability to control the vector**
- ▮ **Disease may manifest months/years after redeploy**
  - **Civilian physicians seeing Guard/Reserve may not have a low threshold of suspicion**
  - **Some units telling members to “go get tested”**



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# ***Actions Taken***

- ▮ **Redeployment briefings, handouts, & wallet cards**
- ▮ **Army policy for diagnosis and treatment of leish**
- ▮ **ID consultant and entomologist placed at Tallil AB**
- ▮ **Joint and component messages strengthened reporting requirements and emphasized PPE**
- ▮ **OSD/HA issuing medical alert to military/VA**
- ▮ **MMWR article to alert civilian MDs**
- ▮ **Tailored risk communication products for MDs/troops**
- ▮ **Deferring new and recalling blood donations**
  - **For anyone deployed to Iraq between Apr-Nov**



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